

Newborn Screening Quality Assurance Program
 Acylcarnitines Quality Control Specimen Certification
 Set 2 – July 2016
Acylcarnitines Analysis Method: Derivatized – MS/MS non-kit
Material Expiration Date: October 2017

ENRICHMENT LEVELS (endogenous levels not included)

<i>Analyte (μmol/L blood)</i>	<i>Lot</i>	<i>Base</i>	<i>Lot</i>	<i>Low</i>	<i>Lot</i>	<i>Interme- diate</i>	<i>Lot</i>	<i>High</i>
Free carnitine (C0)	A1606	0	B1606	10.0	C1606	20.0	D1606	30.0
Acetylcarnitine (C2)	A1606	0	B1606	10.0	C1606	20.0	D1606	30.0
Propionylcarnitine (C3)	A1606	0	B1606	4.0	C1606	8.0	D1606	12.0
Malonylcarnitine (C3DC)	A1606	0	B1606	0.5	C1606	1.5	D1606	3.0
Butyrylcarnitine (C4)	A1606	0	B1606	1.0	C1606	3.0	D1606	5.0
Hydroxybutyrylcarnitine (C4OH)	A1606	0	B1606	0.5	C1606	1.0	D1606	2.5
Isovalerylcarnitine (C5)	A1606	0	B1606	0.5	C1606	1.5	D1606	3.0
Glutarylcarnitine (C5DC)	A1606	0	B1606	0.5	C1606	1.0	D1606	2.5
Hydroxyisovalerylcarnitine (C5OH)	A1606	0	B1606	1.0	C1606	2.0	D1606	3.0
Hexanoylcarnitine (C6)	A1606	0	B1606	0.5	C1606	1.0	D1606	2.5
Octanoylcarnitine (C8)	A1606	0	B1606	0.5	C1606	1.0	D1606	2.5
Decanoylcarnitine (C10)	A1606	0	B1606	0.5	C1606	1.0	D1606	2.5
Dodecanoylcarnitine (C12)	A1606	0	B1606	1.0	C1606	2.0	D1606	3.0
Myristoylcarnitine (C14)	A1606	0	B1606	0.5	C1606	1.5	D1606	3.0
Palmitoylcarnitine (C16)	A1606	0	B1606	4.0	C1606	8.0	D1606	12.0
Hydroxypalmitoylcarnitine (C16OH)	A1606	0	B1606	0.25	C1606	1.0	D1606	1.5
Stearoylcarnitine (C18)	A1606	0	B1606	1.0	C1606	3.0	D1606	5.0
Hydroxystearoylcarnitine (C18OH)	A1606	0	B1606	0.25	C1606	1.0	D1606	1.5

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ANALYTICAL INFORMATION *Lot Numbers, Mean Values (x), and 95% Confidence Limits (CL)*

<i>Analyte ($\mu\text{mol/L}$ blood)</i>	<i>Lot</i>	<i>Mean/ 95% CL</i>	<i>Lot</i>	<i>Mean/ 95% CL</i>	<i>Lot</i>	<i>Mean/ 95% CL</i>	<i>Lot</i>	<i>Mean/ 95% CL</i>
C0	A1606	$\bar{x} = 14.5$ CL = 11.9–17.2	B1606	$\bar{x} = 27.5$ CL = 22.1–32.8	C1606	$\bar{x} = 44.3$ CL = 35.0–53.6	D1606	$\bar{x} = 57.5$ CL = 47.2–67.7
C2	A1606	$\bar{x} = 10.6$ CL = 9.2–11.9	B1606	$\bar{x} = 19.6$ CL = 16.6–22.5	C1606	$\bar{x} = 30.2$ CL = 25.7–34.8	D1606	$\bar{x} = 39.2$ CL = 33.5–45.0
C3	A1606	$\bar{x} = 0.9$ CL = 0.8–1.0	B1606	$\bar{x} = 4.8$ CL = 4.0–5.5	C1606	$\bar{x} = 9.0$ CL = 7.6–10.5	D1606	$\bar{x} = 12.9$ CL = 11.1–14.6
C3DC	A1606	$\bar{x} = 0.0$ CL = 0.0–0.0	B1606	$\bar{x} = 0.4$ CL = 0.3–0.4	C1606	$\bar{x} = 1.1$ CL = 0.9–1.3	D1606	$\bar{x} = 2.2$ CL = 1.8–2.5
C4	A1606	$\bar{x} = 0.1$ CL = 0.1–0.1	B1606	$\bar{x} = 0.8$ CL = 0.7–1.0	C1606	$\bar{x} = 2.3$ CL = 2.0–2.6	D1606	$\bar{x} = 4.2$ CL = 3.6–4.7
C4OH	A1606	$\bar{x} = 0.1$ CL = 0.0–0.1	B1606	$\bar{x} = 0.4$ CL = 0.3–0.5	C1606	$\bar{x} = 0.7$ CL = 0.6–0.9	D1606	$\bar{x} = 1.8$ CL = 1.4–2.1
C5	A1606	$\bar{x} = 0.0$ CL = 0.0–0.1	B1606	$\bar{x} = 0.5$ CL = 0.4–0.6	C1606	$\bar{x} = 1.4$ CL = 1.2–1.7	D1606	$\bar{x} = 2.7$ CL = 2.3–3.2
C5DC	A1606	$\bar{x} = 0.0$ CL = 0.0–0.0	B1606	$\bar{x} = 0.5$ CL = 0.4–0.6	C1606	$\bar{x} = 1.0$ CL = 0.8–1.2	D1606	$\bar{x} = 2.5$ CL = 2.0–2.9
C5OH	A1606	$\bar{x} = 0.5$ CL = 0.5–0.6	B1606	$\bar{x} = 1.3$ CL = 1.1–1.5	C1606	$\bar{x} = 2.3$ CL = 1.9–2.6	D1606	$\bar{x} = 3.1$ CL = 2.7–3.4
C6	A1606	$\bar{x} = 0.0$ CL = 0.0–0.0	B1606	$\bar{x} = 0.3$ CL = 0.3–0.4	C1606	$\bar{x} = 0.7$ CL = 0.6–0.8	D1606	$\bar{x} = 1.8$ CL = 1.6–2.1
C8	A1606	$\bar{x} = 0.0$ CL = 0.0–0.0	B1606	$\bar{x} = 0.5$ CL = 0.4–0.6	C1606	$\bar{x} = 0.9$ CL = 0.7–1.2	D1606	$\bar{x} = 2.5$ CL = 2.0–2.9
C10	A1606	$\bar{x} = 0.0$ CL = 0.0–0.0	B1606	$\bar{x} = 0.5$ CL = 0.4–0.7	C1606	$\bar{x} = 1.0$ CL = 0.7–1.3	D1606	$\bar{x} = 2.7$ CL = 2.0–3.4
C12	A1606	$\bar{x} = 0.0$ CL = 0.0–0.0	B1606	$\bar{x} = 1.0$ CL = 0.7–1.3	C1606	$\bar{x} = 2.0$ CL = 1.4–2.6	D1606	$\bar{x} = 3.1$ CL = 2.4–3.8
C14	A1606	$\bar{x} = 0.0$ CL = 0.0–0.0	B1606	$\bar{x} = 0.5$ CL = 0.4–0.6	C1606	$\bar{x} = 1.5$ CL = 1.1–1.9	D1606	$\bar{x} = 2.9$ CL = 2.3–3.5
C16	A1606	$\bar{x} = 0.7$ CL = 0.6–0.8	B1606	$\bar{x} = 4.2$ CL = 3.4–5.0	C1606	$\bar{x} = 7.9$ CL = 5.9–9.8	D1606	$\bar{x} = 11.3$ CL = 9.3–13.4
C16OH	A1606	$\bar{x} = 0.0$ CL = 0.0–0.0	B1606	$\bar{x} = 0.2$ CL = 0.1–0.2	C1606	$\bar{x} = 0.7$ CL = 0.5–0.9	D1606	$\bar{x} = 1.0$ CL = 0.8–1.2
C18	A1606	$\bar{x} = 0.5$ CL = 0.4–0.6	B1606	$\bar{x} = 1.4$ CL = 1.1–1.6	C1606	$\bar{x} = 3.3$ CL = 2.6–4.1	D1606	$\bar{x} = 5.0$ CL = 4.2–5.8
C18OH	A1606	$\bar{x} = 0.0$ CL = 0.0–0.0	B1606	$\bar{x} = 0.1$ CL = 0.1–0.2	C1606	$\bar{x} = 0.6$ CL = 0.5–0.8	D1606	$\bar{x} = 0.9$ CL = 0.8–1.0

Note: The values provided in the above tables are for reference use only. The mean value and confidence limits (CL) are determined by CDC for each Quality Control (QC) lot. Each participating laboratory must establish its own mean values and CL for its test method with these QC materials. Temporary estimates of mean values and CL can be determined after 10 successive, independent measurements. *Slazyk WE, Hannon WH. Quality assurance in the newborn screening laboratory. In: Therrell BL Jr, editor. Laboratory methods for neonatal screening. Washington (DC): American Public Health Association, 1993:23-46.*